1: Arch Dermatol Res 1992;284(6):368-70

The effect of 1,25(OH)2-vitamin D3 on Langerhans cells and contact hypersensitivity in mice.

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PMID: 1294026 [PubMed - indexed for MEDLINE]

1: Drugs 1995 Aug;50(2):208-21

Therapeutic options in ocular allergic disease.

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The term ocular allergy encompasses a group of diseases in which there is a high frequency of atopy, ocular itching, stringy discharge and a papillary conjunctival reaction. Conditions confined to the lids and conjunctiva (e.g. seasonal allergic conjunctivitis) have a good prognosis but those involving the cornea may result in visual impairment (e.g. atopic keratoconjunctivitis). Mast cell and eosinophil mechanisms are important in al the ocular allergies, but T cell inflammation is prominent only in vernal keratoconjunctivitis, atopic keratoconjunctivitis and giant papillary conjunctivitis. Therapy involves the use of antigen avoidance (where possible), nonspecific medical therapy (e.g. cold compresses, artificial tears), specific medical therapy and, in certain situations, immunotherapy and surgery. Topical antihistamines (often in combination with a vasoconstrictor) and oral antihistamines are widely used in perennial and seasonal conjunctivitis. Levocabastine is a new preparation which is more rapid and potent. Mast cell inhibitors [e.g. sodium cromoglycate (cromolyn sodium)] have a proven track record as safe and effective therapy for all ocular allergic diseases and the newer, more potent nedocromil and lodoxamide are now available. Topical steroids are only indicated in sight-threatening disease due to their serious adverse effects and other therapy should be continued to minimise the dose required. There is a lack of intermediate potency and high potency but safe topical preparations. A number of future possibilities exist, some of which have been partially explored. Cyclo-oxygenase inhibitors have proved of limited use, but inhibitors of lipoxygenase and kinin pathways are awaited. Although results with HEPP have been disappointing, other modulators of mast cell function (e.g. picumast, beta-agonists and phosphodiesterase inhibitors) may prove useful in the future. So far, results with topical cyclosporin in serious disease are very encouraging. Future developments in the manipulation of eosinophilic products, cytokines and adhesion molecules may also be relevant. However, the current situation for those with serious ocular allergy remains a disturbing dependence upon topical steroids, with all the attendant risks.

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1: J Investig Dermatol Symp Proc 1996 Apr;1(1):68-71 Related Articles, NEW Books

1,25-Dihydroxyvitamin D3 as a natural regulator of human immune functions.

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1,25-dihydroxyvitamin D3 (1,25-D3) modulates lymphocyte and macrophage functions in vitro. These effects are exerted through production of 1,25-D3 by antigen-presenting monocytes/macrophages (MO) and binding to vitamin D receptors expressed in MO and in activated, but not in resting T-lymphocytes. 1,25-D3 inhibits production of MO-derived cytokines such as interleukin-1 alpha, interleukin-6, and tumor necrosis factor alpha at the post-transcriptional level, most likely by reducing the half-life of specific mRNAs. The proliferation of T-cells and their release of cytokines such as IL-2 and interferon gamma are also suppressed by 1,25-D3, partly as a result of the reduced production of T-cell-activating cytokines (interleukin-1 alpha, tumor necrosis factor alpha), but also because of a direct effect on the T-cells. Although 1,25-D3 has no apparent effect on B-lymphocytes, the T-cell suppression indirectly inhibits antibody production by B-cells. The CD45R0+ subset of T-helper cells is relatively more sensitive than the CD45RA+ subset to the inhibitory effects of 1,25-D3. The CD45R0+ subset plays a key role in immune activation and in the pathogenesis of many autoimmune disease. 1,25-D3 acts as an important local regulator of T-cell functions and thus modulates several immunological effector functions. The actions of 1,25-D3 are distinct from those of commonly used immunosuppressants, and vitamin D3 analogs are therefore potentially useful as alternatives to conventional immunosuppressive therapies.

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